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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,907	10/30/2003	Masaru Yarita	Q78282	5656

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2100 PENNSYLVANIA AVE. NW
WASHINGTON, DC 20037-3213

EXAMINER	
CHOW, JEFFREY J	
ART UNIT	**PAPER NUMBER**
2628	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/695,907	YARITA, MASARU	
	Examiner	Art Unit	
	Jeffrey J. Chow	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 December 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,12 and 13* is/are pending in the application.

4a) Of the above claim(s) *4-11* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,12 and 13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments regarding claims 1 – 3, filed 18 December 2006, have been fully considered but they are not persuasive.

Applicant argues that Stetson (US 2006/0111623) does not suggest determining a rotating angle in the claimed manner and separating components of the signals by rotating a matrix in accordance with such a rotating angle (page 8). Stetson discloses to more fully separate the signal and the noise, the data are furthered processed: in mathematical terms, the data are rotated (paragraph 34) and one could heuristically sweep through a large range of angles about which to rotate the principal components (paragraph 35) and that data are rotated by the angle of the best linear fit between those two signals (paragraph 41) and the mixture signals correspond with signals obtained by a pulse oximeter sensor, which include both the desired signal and to separate the signal and the noise by rotating the data (paragraph 34) and since the data of the signals are two-dimensional data, it is inherent that a matrix is used for rotation.

The 35 U.S.C. 101 rejections have not been withdrawn. Practical application produces a useful, tangible and concrete result. In determining whether the claim is for a "practical application," the focus is not on whether the steps taken to achieve a particular result are useful, tangible and concrete, but rather that the final result achieved by the claimed invention is "useful, tangible and concrete." The received first and second signals are not the final result produced by the claimed invention.

Election/Restrictions

This application contains claims 4 – 11 are drawn to an invention nonelected without traverse in Paper No. 20060609. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, 2, and 12 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims recite a method, but appear to be directed to an abstract idea rather than a practical application of that idea. Claims that consist solely of data manipulation do not fall under statutory matter because no tangible result is produced. The claimed invention does not produce a concrete, useful, and tangible result, nor does it result in a physical transformation.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 12, and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Stetson (US 2006/0111623).

Regarding independent claim 1, a time processing unit 130 provides timing control signals to light drive circuitry 132 which controls when light source 110 is illuminated, and if multiple light sources are used, the multiplexed timing for the different light sources (paragraph 26), which reads on the claimed receiving a first signal coming from a medium for a predetermined time period as a first data set and the claimed receiving a second signal coming from the medium for the predetermined time period as a second data set. Stetson discloses two signals being plotted (Figures 3 – 5), which reads on the claimed plotting the first data set and the second data set on a two-dimensional orthogonal coordinate system. Stetson discloses to more fully separate the signal and the noise, the data are furthered processed: in mathematical terms, the data are rotated (paragraph 34) and one could heuristically sweep through a large range of angles about which to rotate the principal components (paragraph 35) and that data are rotated by the angle of the best linear fit between those two signals (paragraph 41), which reads on the claimed determining a rotating angle of a rotating matrix so as to minimize a distribution range of the first data set and the second data set which are projected on one of the first axis and a second axis of the coordinate system. Stetson discloses the mixture signals correspond with signals obtained by a pulse oximeter sensor, which include both the desired signal and to separate the signal and the noise by rotating the data (paragraph 34) and since the data of the signals are two-dimensional data, it is inherent that a matrix is used for rotation, which reads on the claimed separating a signal component and a noise component contained in the observed data

by rotating the first data set and the second data set plotted on the coordinated system with the rotating angle.

Regarding dependent claim 3, Stetson discloses a processor 122 (Figure 1), which reads on the claimed signal processor.

Regarding dependent claims 12 and 13, Stetson discloses a graph of signals at two wavelengths plotted against one another (Figures 6 – 8), which reads on the claimed outputting the signal component and the claimed displaying information relating to the signal component.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stetson (US 2006/0111623) in view of Richter (US 6,265, 868).

Regarding dependent claim 2, Stetson did not expressly disclose finding the fundamental frequency through frequency analysis. Richter discloses a frequency analysis device for measuring remaining signal strength by generating a Fourier spectrum from the test signal information, the Fourier spectrum including a fundamental frequency, and measuring an amplitude of the fundamental frequency (claim 15). It would have been obvious for one of ordinary skill in the art at the time of the invention to modify Stetson's system by determining a

fundamental frequency from a frequency analysis. One would be motivated to do so because this would give help determining the strength of the signal.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey J. Chow whose telephone number is (571)-272-8078. The examiner can normally be reached on Monday - Friday 10:00AM - 5:00PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571)-272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JJC

ULKA CHAUHAN
SUPERVISORY PATENT EXAMINER